REMARKS

In the Office Action mailed October 9, 2007, the Examiner indicated that claims 28, 29, 33, 34, and 39-47 "as amended" are withdrawn from consideration as being directed to a non-elected invention; and rejected claims 28-54 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,261,874 to Castle ("Castle") in view of U.S. Patent No. 6,284,131 to Hogard et al. ("Hogard") and further in view of U.S. Patent No. 5,092,836 to Polaschegg ("Polaschegg").

By this Reply, Applicants have amended claims 28, 29, 33-35, 37, and 39-47 and have added new claims 55-62. Claims 28, 29, 33-35, 37, 39-47, and 55-62 are currently pending in this Application. No new matter has been added by this Reply. Support for the claim amendments and the newly added claims can be found, for example, in Fig. 2 of the specification and on page 6, line 6 - page 10, line 21.

At the outset, Applicants traverse the Examiner's withdrawal of claims 28, 29, 33, 34, and 39-47 as being directed to a non-elected invention. By this Reply, Applicants have amended claims 28, 29, 33, 34, and 39-47 to be directed to the previously elected invention. Accordingly, Applicants respectfully ask the Examiner examine these claims, as amended by this Reply.

Applicants respectfully traverse the Examiner's rejection of claims 28-54 under 35 U.S.C § 103(a) as being unpatentable over Castle in view of Hogard and further in view of Polaschegg. Applicants submit that amended claim 28, for example, is not obvious over Castle, Hogard, and Polaschegg because the Examiner has failed to establish a prima facie case of obviousness. The Examiner has not either (1) considered all the present claim limitations; (2) provided a suggestion or a motivation for one of ordinary skill in the art to modify the teachings of Castle, Hogard, and Polaschegg to arrive at the claimed invention; or (3) evidenced that the

proposed combination would have a reasonable expectation of success. *See* M.P.E.P. §§ 2143.

The Examiner contends that "Castle describes an extra-corporeal blood access sensing, and radiation method and apparatus comprising at least one blood treatment unit 1 . . . at least a first sensor 5, [and] at least a second sensor 6." (Office Action at 3.) The Examiner concedes that "Castle does not teach a memory unit as claimed." (Id.) The Examiner contends, however, that "Hogard teaches a computer comprising a microprocessor circuit comprising a microprocessor, memory . . . and a communication device for the benefit of providing user interface, machine control, microcontroller communications, conducting of self-tests, and calibrations. (Hogard col. 12, lines 8-14.)." (Office Action at 3-4.) Applicants submit that this abbreviated summary of the teachings of Hogard is misleading. In particular, the Examiner has cited to col. 12, lines 8-14 in order to allegedly describe the capabilities of the computer disclosed in Hogard. However, lines 12-14 of the cited passage further state that "[t]hese functions are carried out by the AT-computer in conjunction with the above-listed expansion boards." Thus, the computer disclosed in Hogard does not provide the above-identified functions on its own. The Examiner further contends that it would have been obvious to one skilled in the art to modify the teachings of Castle with those of Hogard. Applicants disagree. Nevertheless, even if one skilled in the art were to modify the teachings of Castle with the above-described teachings of Hogard, one skilled in the art would not have arrived at the invention recited in amended claim 28. Moreover, by further combining the teachings of Polaschegg, one skilled in the art still would not have arrived at the invention of amended claim 28.

More specifically, Castle, Hogard, and Polaschegg all at least fail to disclose the claimed apparatus comprising "a memory means for storing at least one set flow value of a desired blood flow through said access branch, measured values of arterial pressure and angular velocity, and a calibration function in accordance with at least the following variables: v1, related to the angular velocity of the pump; v2, related to the arterial pressure in the portion of said at least one access branch upstream of the at least one peristaltic pump; and v3, related to an actual flow of blood through said at least one access branch," as recited in amended claim 28. Castle, Hogard, and Polaschegg also do not disclose an apparatus comprising a "control unit including means for sequentially executing a control procedure, the means for sequentially executing the control procedure comprising: means for calculating an actual flow value by applying said calibration function to the corresponding measured values of arterial pressure and angular velocity; means for comparing said actual flow value with said at least one set flow value; means for comparing the angular velocity with an acceptable maximum angular velocity value which can be imparted to the at least one peristaltic pump; and means for varying the angular velocity of said at least one peristaltic pump if the difference between the actual flow and the desired blood flow lies outside a predetermined range, as recited in amended claim 28.

As discussed above, Castle discloses various methods for extra-corporeally applying radiant energy to flowing blood flowing through a hollow tubular conduit, but fails to disclose or suggest an "apparatus for controlling blood flow in an extracorporeal blood circuit" comprising the structural means for carrying out the various functions recited in amended claim 28. As also discussed above, the Examiner contends that Hogard teaches a "computer comprising a microprocessor

circuit comprising a microprocessor, memory . . . a temperature measurement and interface circuit." (Office Action at 3.) Hogard, however, does not disclose an "apparatus for controlling blood flow in an extracorporeal blood circuit" comprising the structural means for carrying out the various functions recited in amended claim 28. The Examiner further contends that Polaschegg "teaches an arterial pressure sensor." (Id.) Polaschegg, however, similarly fails to disclose an "apparatus for controlling blood flow in an extracorporeal blood circuit" comprising the structural means for carrying out the various functions recited in amended claim 28.

Accordingly, in light of the deficiencies of Castle, and the failure of Hogard and Polaschegg to overcome those deficiencies, Applicants submit that amended claim 28 is allowable over the applied references. Further, claims 29, 33-35, 37, 39-47, and new claims 55-62 are allowable at least due to their dependence from allowable amended claim 28.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

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By: *Aaron L. Parker*
Aaron L. Parker
Reg. No. 50,785